

OLDSMOBILE ACHIEVEMENTS

New Company in Full
Swing on Hudson
Avenue

The Oldsmobile Sales company of-
fices at 2331 Hudson avenue, are in
full swing now, the opening last week
being of considerable interest to auto
circles. Many visitors have visited the
new place of business to give the
"once over" to the new car. Speaking
of the Oldsmobile, J. Scott Nelson,
sales manager for the company, states
that it is especially gratifying to
know that the average automobile
buyer has his interest in the
endurance of the automobile he con-
siders buying.

"This, of course, is as it should be,"
Mr. Nelson continued, "for the length
of a car's life and the cost of main-
taining it are by far the most im-
portant factors in determining its final
per-mile-cost to the owner."

"After submitting the 'Olds' engine
to a series of accurate tests in the
laboratories of the General Motors
company at Dayton, Ohio, the chief
engineer summed up his report of the
Oldsmobile Eight Model 47, as follows:
"The maximum horsepower developed
was 63.5. When the dimensions of the
motor (2 7/8 inch bore by 4 1/2 inch
stroke) are considered, the power of
this motor is nothing short of amaz-
ing. In fact it has the highest horse-
power per cubic inch displacement of
any standard automobile engine in the
United States." Such a test report is
enough to convince any one who is
familiar with the principles of auto-
mobile engineering, that the 'Olds'
motor marks a new forward step in
real pulling power and speed range of
engines.

"During a test run of 1000 miles in
California recently, a model 47 light
eight Oldsmobile maintained an average
speed of 66 2/3 miles per hour. The
only attention the car received was
to supply it with oil and gas and a
very little water. The bonnet was
not lifted during the entire 1000
miles. In actual road service the
Oldsmobile Eight has proven its great
endurance in every way. We are, of
course, very proud of the wonderful
achievements of the Oldsmobile."

THE THRILL THAT COMES ONCE IN A LIFETIME



THE GLAD VACATION TIME
ARRIVES AT LAST. NO MORE
ALGEBRA, GEOMETRY, POLITICAL
ECONOMY OR WORK OF ANY KIND
FOR 3 MONTHS

LARGE MARKET FOR MOTOR CAR

United States Can Absorb
Twice Present Number
of Vehicles

The United States can absorb twice
the number of motor vehicles that are
registered at the present time, according
to C. J. Nephler, of the Oakland
Motor Car company.

"In every state in the Union had the
number of motor cars per capita that
Iowa has, there would be 20,000,000
passenger and commercial cars in use,"
reasons Mr. Nephler.

"Of course this depends upon a
greater per capita wealth. Figures
compiled contrasting personal income
taxes and automobiles per capita in-
dicate that invariably the states showing
a large number of returns for personal
income tax likewise show a
large per capita percentage of auto-
mobiles."

"The increase in automobile pur-
chases will undoubtedly continue in
the prosperous agricultural communi-
ties. That is borne out by the motor
density in such states as Iowa, Cali-
fornia, the Dakotas and Nebraska."

"In the rural sections the automo-
bile is a real necessity. The use of
the automobile has been increased in
these sections to a great extent by the
improvement in roads. In fact good
roads are responsible for the large
number of automobiles in the great,
wealthy agricultural states I have
mentioned."

"It will not be far distant before
15,000,000 passenger and commercial
cars will be in use. When this oc-
curs, there would be a renewal of ap-
proximately 2,500,000 cars yearly,
basing the average life of a car at six
years. This tremendous replacement
alone would be another great stabiliz-
ing feature of the automobile indus-
try."

BRICK OR BLOCK AND FLEXIBLE FILLER MAKES BEST PAVEMENT

BY PREVOST HUBBARD,
Former Chief, Division of Tests, U. S.
Bureau of Public Roads.

It is an almost incomprehensible
fact that in building our state and
county highways systems more weight
has been attached to paving practice
in our cities where many of the prob-
lems of meeting heavy and varied
traffic conditions were successfully
solved before such conditions made
their appearance in country and sub-
urban highways.

In our cities the original water-
bound macadam and gravel roads
have for the most part given way to
higher types of construction until to-
day they constitute an average of only
about 26 per cent of the total yard-
age. The three most widely used city
types are asphalt, brick and stone
block. If we eliminate the water-
bound pavements we find that of the
higher city types asphalt constitutes
about 55 per cent, brick about 19 per
cent and stone block about 14 per
cent, giving a total of 88 per cent for
these three types.

In connection with the preponder-
ance of asphalt pavements the present
trend of paving practice in the
construction of modern brick and
stone block pavements is of consid-
erable significance, as it recognizes a
principle which just now is attracting
a great deal of attention on the part
of our highway engineers. I refer to
the use of a flexible joint filler for
brick and block pavements as against
the rigid grout fillers formerly so

popular. Such cities as New York
and Philadelphia are now using as-
phalt fillers for heavy traffic streets
paved with stone block and the Pav-
ing Brick Manufacturers association is
preferentially recommending asphalt
as a filler for its type of pavement.
The reason for this lies in the fact
that absolute rigidity in a pavement
structure is not a desirable charac-
teristic.

Service results and comprehensive
field tests conducted by the United
States bureau of public roads have
demonstrated that the brick or block
pavement with a flexible filler is
more resistant to traffic than with a
rigid filler. A certain degree of flexi-
bility is highly advantageous in meet-
ing the heavy impact of modern traf-
fic.

FLEXIBILITY INHERENT.

Such flexibility is an inherent char-
acteristic of bituminous pavements
and is imparted to brick and block
pavements when asphalt is used as a
joint filler.

While in certain sections of the
country the experience of our cities
appears to have been overlooked, it is
a fact that the flexible or semi-flexi-
ble types of construction predominate
in our country roads and if we con-
sider the total mileage of state, county
and municipal highways higher than
gravel and macadam considerably
more than 50 per cent may be so
classified. By reducing all yardage
to a basis of sixteen feet width, we
estimate that at least 45 per cent of
the mileage of the higher types of
pavements are of the hot-mixed as-
phalt types. The latest available in-
formation indicates that last year the
total area of asphalt pavement con-
structed approximated 68,000,000
square yards, which was greater than
for any other type. Most of the stone
block pavements constructed that
year were filled with bituminous ma-
terial and about 60 per cent of the
brick pavements were similarly filled.

There are, it is true, many advoca-
tes of the all rigid monolithic types
of construction and in certain sec-
tions such pavements predominated
in last year's work. This is not true,
however, of the country, as a whole.
Those who favor rigid construction
have constantly been obliged to in-
crease the massiveness of design of
such pavements and also the amount
of reinforcement in an endeavor suc-
cessfully to meet the destructive ac-
tion of heavy traffic, while those
who have favored the semi-flexible or
flexible types have, in general, found
that the old standards or flexible
types have proven satisfactory. The
all flexible types, such as the black
base pavements so extensively adopted
in our far western states appear to
be the most highly resistant per inch
of total thickness, and may therefore
be considered the least massive and in
this respect the most efficient of the
heavy traffic pavements.

TRAFFIC IMPACT.

It is probable that such pavements
will be given considerable attention in
the 1922 program of some of our
eastern states owing to the remark-
ably satisfactory results obtained over
a long period of years in the west.
Many of these pavements are six
inches or less in total thickness.

What we have learned in the last
few years about the destructive ef-
fect of traffic impact and the resist-
ance to impact offered by semi-flexi-
ble and flexible highway structures
has a peculiar significance in connec-
tion with a great economic problem;
that of conserving our investment in
old roads, particularly gravel and
macadam, when it becomes necessary
to adopt a higher type of wearing
surface. Prior to the careful inves-
tigation of this important subject
there existed a marked and growing
tendency to discredit the use of old
gravel and macadam roads for founda-
tions for the higher types and this
in spite of many remarkable service
records of macadam foundations. For
example, in the city of New York a
number of the most heavily traveled
streets were constructed years ago
on macadam foundations and some

are still giving satisfactory service.
In 1890 Broadway, between Fifty-
ninth and Seventy-ninth streets, was
paved with asphalt over an old ma-
cadam base and for 22 years gave
good service. Its replacement at the
end of this period was largely due to
subway excavations. Seventy-second
street, paved in a similar manner, al-
so gave 22 years of service under
increasingly severe traffic conditions
and the same is true for a 19-year
period for Fifth avenue between
110th and 120th streets. Lenox ave-
nue between 110th and 124th streets
was surfaced with asphalt over old
macadam in 1904 and is still giving
good service. The cost of maintain-
ing this section in 1919—fourteen
years after construction—was only 1
per cent, certainly a remarkable re-
cord. Many similar cases might be
cited from various localities.

ROLLED STONE BASES.

A recent investigation of rolled
stone bases for brick pavements was
conducted by the U. S. bureau of pub-
lic roads, and A. T. Goldbeck of that
bureau has published a very favorable
report on this type of brick construc-
tion. All in all it appears that the
old waterbound base is again coming
into its own.

One reason for much of the former
disaffection for such bases was un-
doubtedly due to a fault which has
been all too prevalent in the rapid
development of our country highway
systems. I refer to inadequate prepa-
rations and drainage of our sub-
grades fostered by the false idea that
the cost for such work would make
the total cost prohibitive. Political
pressure and popular demand for the
rapid construction and the greatest
possible mileage of improved roads
for a given amount of money have
been to a great extent responsible
for this state of affairs. However,
this subject is receiving an increas-
ing amount of attention and is be-
ing most carefully investigated by the
government and number of public
service bodies and technical societies,
the work of the various organizations

Studebaker

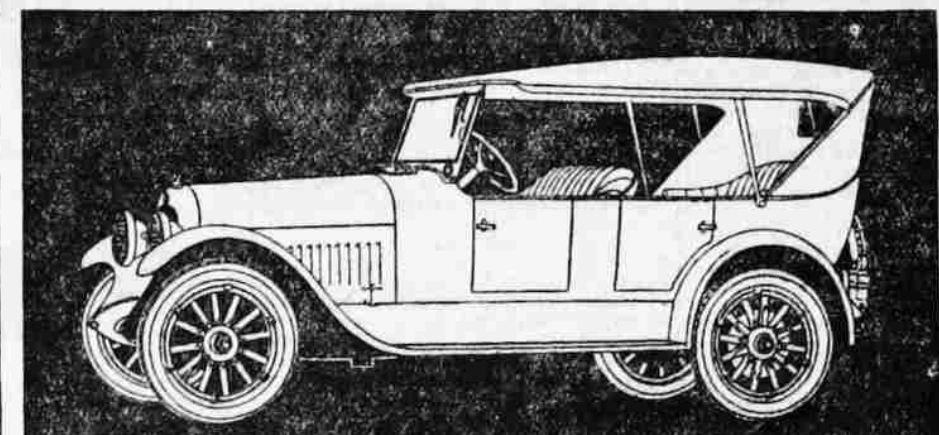
STUDEBAKER builds more
six-cylinder cars than any
other manufacturer because
Studebaker builds them better.
We can show you 84 definite
points of superiority in the
Special-Six over Studebaker's
nearest competitor.

In times of close competition,
merit wins. Today competition
in automobiles is keener than it
ever was, because people are

buying more carefully than ever.
Studebaker increased its sales
29% in 1921, though the industry,
as a whole, showed a falling off of
nearly 45%. 1922, up to May
1st, shows a gain in Studebaker
production of 143% over the
same period of 1921.

Studebaker sales records tell their
own story. The buying public
has declared for Studebaker supe-
riority.

Touring, \$1475; Roadster (2-Pass.), \$1425; Roadster (4-Pass.), \$1475;
Coupe (4-Pass.), \$2150; Sedan, \$2350. All prices f. o. b. factory.



R. T. MITCHELL CO.

2354 Hudson Ave.

Phone 331

THIS IS A STUDEBAKER YEAR

being correlated by the advisory board
on highway research of the national
research council.

TEN MILLION CARS IN UNITED STATES

Passenger car registration in the
United States has doubled in the last
ten years. Today ten million cars
are registered, which is five-sixths of
all the world's automobiles. But fast-
er still has been the increase in com-
mercial car registration. The record
is a more than 700 per cent increase
in this period.

Ten years ago there were 61,000
motor trucks. Today there are over
a million. Then there was one com-
mercial car to 75 passenger cars, but
now there is one truck to eight pas-
senger cars. Sixty per cent of today's
trucks are one-ton sizes or less, and
25 per cent are from one and one-half
to two-ton capacity.

Miller the men estimate that the
annual tire bill for commercial cars in
the United States approximates \$175-
000,000. This is on a basis of a 5-
000,000 tire requirement yearly for
commercial cars. Sixty per cent of
these tires are pneumatic.

CARRY RADIO ON MOTORCYCLE

The protection against fires of the
great forests of the Pacific north-
west is a tremendously important mat-
ter to federal and state officials and
to private owners of timber as well.
The vast tracts of virgin timber in
the Puget Sound basin represents bil-
lions in wealth.

Forest fire is the great menace to
this immense treasure-house, and in
reducing the danger hazard of tim-
ber conflagrations, the motorcycle is
enough.

ANTI-CHRISTIAN MOVEMENT ALARM

AMOY, China, June 17.—The re-
ligious world of the Far East is stir-
red by an anti-Christian movement which
started early in May among the stu-
dents of Peking university, and is now
rapidly spreading among the stu-
dents of private and government schools
throughout the country. These young
people term Christianity a superstition
and harmful to the people, taking
away reverence for ancestors and fre-
edom of thought and action.

The new movement has begun
energetic propaganda, which in turn
has brought Christian leaders to the
front, many of whom look upon the
movement with grave misgivings, not
knowing what will be the outcome.
Others think it is simply the result
of a desire to organize something, so
that the best means of defeating it
is to ignore it.

Conditions provoking the organiza-
tion of such a movement are said to
be the rapid progress of Christianity in
China, taken together with much talk and advertising
of the recent world's Christian stu-
dent conference and other conferences
a like nature held in this country. The
students are declared to be uncon-
scious tools in the hands of leaders who
are seeking favorable conditions for
breaking up of organized society and
the working of Communistic ideas.

The leaders of this anti-Christian
movement are Dr. Tsai Yanpei, Chan-
cellor of the Peking National Uni-
versity; Wang Chaoming, secretary
Dr. Sun Yat-sen, and Chen Tu-shu, who
is a Socialist. Sub-organizations
have already been formed among
the students of Amoy University.

The Chinese pen is a brush made
of soft hair.

GATES TIRES

The Tire with the Wider and Thicker Tread

Two Kinds Of Cars Not Found in "Used Car" Columns

One kind is the car so
new that it has not yet
been fully tested out in
service.

The other is the Hupmo-
bile kind—in such sharp
demand that it need not
be advertised.

One reason there is a
scarcity of used Hupmo-
biles, is the excellent,
low-cost service they af-
ford their original own-
ers over a period of
years. The owner be-
lieves, and with reason,
that it is the part of wis-
dom for him to hold on
to his Hupmobile.

It will place you under
no obligation to phone
for a demonstration at
once.

Naisbitt Motor Co.
432 Twenty-fifth Street
Phone 387
OGDEN, UTAH

If You Use Tires You Know This---

The cord or fabric in a tire can
deliver miles only so long as a rub-
ber tread protects it.

Clearly, a wider and thicker tread
—with more rubber in it—wears
longer and gives the inside fabric
extra protection.

It's perfectly plain, then, why you are
getting more miles from Gates Super-
Tread Tires. They have a wider and
thicker rubber tread.

NOW THE GREATEST AUTOMOBILE VALUE IN AMERICA

Today's Overland: 25 miles to the gallon; all-steel
body; baked enamel finish; 130-inch spring base

HERE'S a car that makes
a friend of you, from
the first moment you see it.
Eager, willing, on the job,
sparing you tire and gas
money, considerate of your
comfort.

Today's
Overland
\$550

f. o. b. Toledo
TOURING ... \$550
ROADSTER ... 550
COUPE ... 850
SEDAN ... 895

BROWNING AUTO CO.

2450 Grant Ave.

Phone 2281